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said USSN 09/067,615 and U. S. Pat. No. 5,869,270 are each incorporated herein by reference.--.

IN THE CLAIMS:

Please cancel claims 1-28, 32-34, 38-42, 49-51 without prejudice.

Kindly add the following new claims 52-86.

52. (New) A single chain class II MHC molecule comprising;
a peptide-binding groove and
covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3)
a class II α chain,
wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane
domain and
the chain of 1) or 3) or both 1) and 3) are truncated compared to the full length
chain.

53. (New) The MHC molecule of claim 52, wherein the MHC molecule is soluble.

54. (New) The MHC molecule of claim 52, wherein the chain of 1) comprises a $\beta 1$
domain and the chain of 3) comprise an $\alpha 1$ domain.

55. (New) A DNA construct encoding the MHC molecule of claim 52 or 53.

56. (New) The MHC molecule of claim 52, wherein the single chain linker is linked
between the carboxyl terminus of the β chain and the amino terminus of the α chain.

57. (New) The MHC molecule of claim 52, wherein the β and α chains are each
independently selected from the group consisting of IE, IA, DR, DQ and DP proteins.

59-58. (New) The MHC molecule of claim 52 further comprising a presenting peptide non-covalently linked to ^{the} a peptide binding groove of the MHC molecule.

60-59. (New) The MHC molecule of claim 52 wherein the MHC molecule is modified to carry a detectable tag;

61-60. (New) A multivalent MHC complex comprising two or more linked MHC molecules of claim 52;

62-61. (New) A MHC complex of claim 60 wherein the MHC molecules are linked to immunoglobulin domains.

63-62. (New) A MHC complex of claim 60 wherein the MHC complex is modified to carry a detectable tag.

64-63. (New) A method for selecting host cells which express a single chain MHC class II molecule comprising:

introducing into host cells a cloning vector the comprises a DNA construct encoding a single chain MHC class II molecule of claim 52.

culturing the host cells to express the MHC molecule; and

isolating the host cells which express the MHC molecule.

65-64. (New) A host cell obtained by the method of claim 63, and wherein the host cell comprises a cloning vector comprising a DNA construct encoding the single chain MHC class II molecule.

66-65. (New) A single chain MHC class II-peptide complex comprising:
a peptide-binding groove;

covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3) a class II α chain, wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane domain and the chain of 1) or 3) or both 1) and 3) are truncated compared to the full length chain; and presenting peptide covalently linked to the MHC molecule.

66. (New) The MHC complex of claim 65, wherein the complex is soluble.

68-67. (New) The MHC molecule of claim 65, wherein the chains of 1) and 3) comprise a $\beta 1$ domain and $\alpha 1$ domain, respectively.

69-68. (New) The complex of claim 65, wherein the MHC class II molecule comprises the presenting peptide covalently linked to the β chain.

70-69. (New) A DNA construct encoding for the complex of claim 65, 66, 67 or 68.

71-70. (New) The complex of claim 65, wherein a presenting peptide linker sequence is interposed between the presenting peptide and the MHC molecule.

72-71. (New) The complex of claim 65, wherein the β and α chains are each independently selected from the group consisting of IE, IA, DR, DQ and DP proteins.

73-72. (New) The MHC molecule of claim 65 wherein the MHC molecule is modified to carry a detectable tag.

74-73. (New) A multivalent MHC complex comprising two or more linked MHC molecules of claim 65.

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74. (New) The MHC complex of claim ⁷⁴73 wherein the MHC molecules are linked to immunoglobulin domains.

75. (New) The MHC complex of claim ⁶¹60 wherein the MHC complex is modified to carry a detectable tag.

7776. (New) A method for selecting host cells which express a single chain MHC class II-peptide complex comprising:

introducing into host cells a cloning vector the comprises a DNA construct encoding a single chain class II-peptide complex of claim 65,
culturing the host cells to express the MHC complex; and
isolating the host cells which express the complex.

7877. (New) A host cell obtained by the method of claim 76, and wherein the host cell comprises a cloning vector that codes for the single chain MHC class II-peptide complex.

7978. (New) A method for identifying presenting peptides that bind a class II MHC molecule comprising;

a) mixing a single chain class II MHC molecule with a peptide library under conditions to allow non-covalent interaction between presenting peptides and the peptide binding groove of the class II MHC molecule; and

b) detecting the interaction between the single chain class II MHC molecule and the presenting peptides,

wherein the single chain class II MHC molecule comprises covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3) a class II α chain, wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane domain.

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80-79. (New) The method of claim 78 wherein the single chain class II molecule is modified to carry a detectable tag.

81-80. (New) The method of claim 79 wherein the single chain class II molecule is modified with a radioactive label or biotin moiety.

82-81. (New) A method of inducing an immune response in a mammal comprising administering to the mammal an effective amount of a single-chain class II MHC molecule comprising loaded or covalently linked peptide and that comprises covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3) a class II α chain, wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane domain.

83-82. (New) The method of claim 81 wherein the MHC molecule is soluble.

84-83. (New) The method of claim 81 wherein the MHC molecule comprises covalently linked in sequence: 1) presenting peptide, 2) a class II β chain, 3) a single chain linker, and 4) a class II α chain.

85-84. (New) The method of claim 81 where the MHC molecules are multivalent.

86-85. (New) The method of claim 81 wherein the mammal is or is susceptible to being immunocompromised.

87-86. (New) The method of claim 85 wherein the immunocompromised mammal has been exposed to viral infection or chemotherapy.

REMARKS

Claims 1-28, 32-34, 38-42, 49-51 have been cancelled and new claims 52-86 have been added. Accordingly, claims 29-31, 35-37, 43-48, 52-86 are now pending.